

Fig. 1

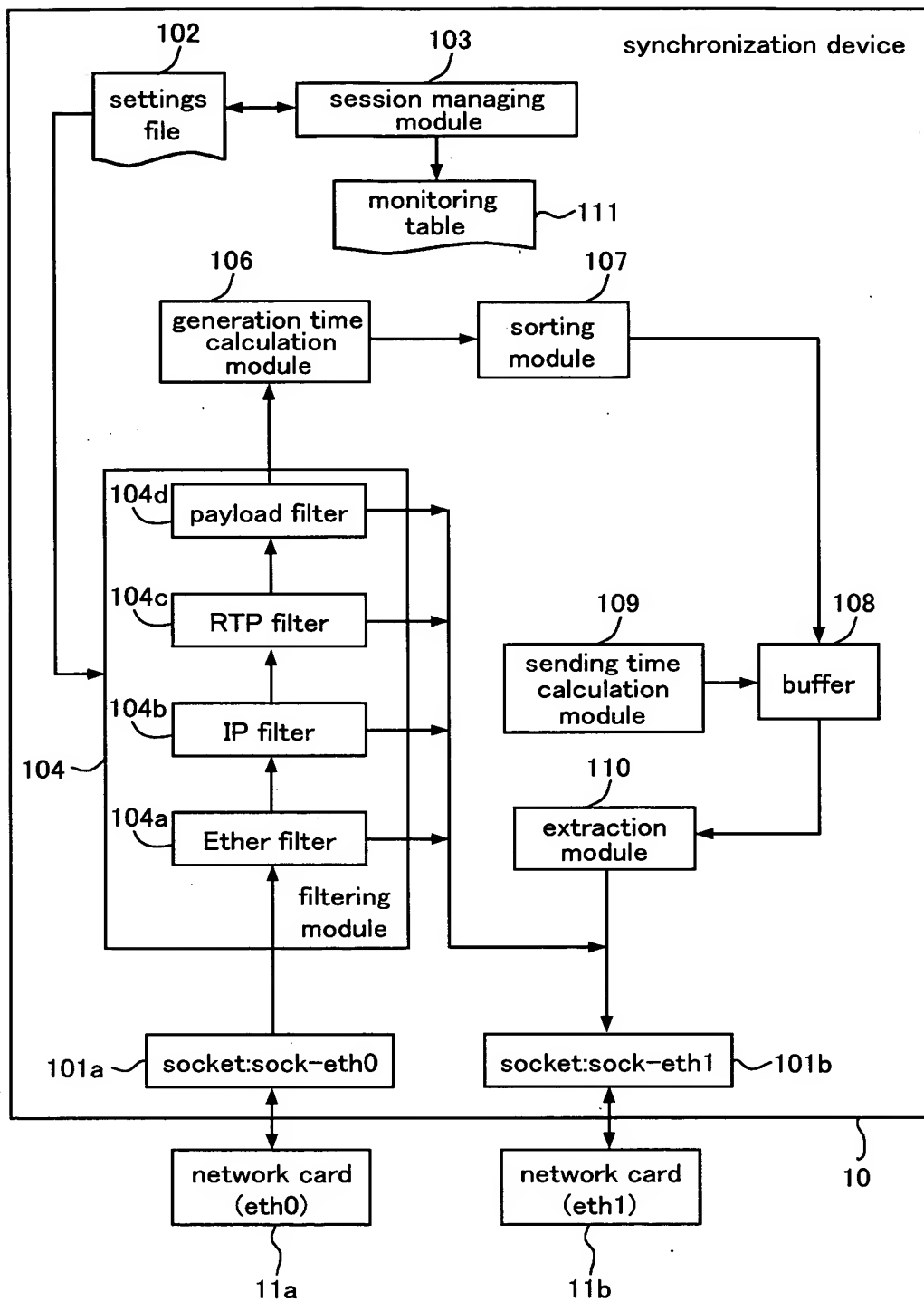






Fig. 2

```
# Group_1 Settings
Group_1_Name: English Conversation Class
Group_1_Comment: Flow Group for English School
# Source Specification
Group_1_Src: 12.345.678.910, 6970, 96
Group_1_Src: 12.345.678.910, 8090, 97
Group_1_Src: 98.765.432.198, 6970, 96
Group_1_Src: 98.765.432.198, 8090, 97
# Destination Specification
Group_1_Dst: 56.789.123.456, 6974, 96
Group_1_Dst: 56.789.123.456, 6972, 97

# Group_2 Settings
.
```

Fig. 3

Synchronization System Settings

Source Specifications

IP Address	Port Number	Payload Type	
<input type="text" value="12.345.678.910"/>	<input type="text" value="6970"/>	<input type="text" value="audio (uLaw)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="12.345.678.910"/>	<input type="text" value="8090"/>	<input type="text" value="video (Mpeg4)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="98.765.432.198"/>	<input type="text" value="6970"/>	<input type="text" value="audio (uLaw)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="98.765.432.198"/>	<input type="text" value="8090"/>	<input type="text" value="video (Mpeg4)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="button" value="Add"/>

Destination Specifications

IP Address	Port Number	Payload Type	
<input type="text" value="56.789.123.456"/>	<input type="text" value="6974"/>	<input type="text" value="audio (uLaw)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="56.789.123.456"/>	<input type="text" value="6972"/>	<input type="text" value="video (Mpeg4)"/> <input checked="" type="checkbox"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text"/>	<input type="text"/>	<input checked="" type="checkbox"/>	<input type="button" value="Add"/>

Fig. 5

111

Source IP Address	Port Number
12.345.678.910	6970
12.345.678.910	8090
98.765.432.198	6970
98.765.432.198	8090

Fig. 6

preamble	destination address	source address	type	data	FCS
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Fig. 7

version	header length	service type	packet length	
identifier			flag	fragment offset
time to live		protocol	header checksum	
source IP address				
destination IP address				
options			padding	
IP data				

Fig. 8

SourcePort	DestinationPort
Length	Checksum
Data Main Portion	

Fig. 9

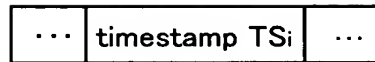
V	P	X	CC	M	PT	Sequence Number
RTP Timestamp (timestamp)						
Synchronization Source Identifier (SSRC)						
Application Data						

Fig. 10A

V	P	RC	PacketType(200)	Length
Synchronization Source Identifier (SSRC)				
NTP Timestamp				
RTP Timestamp				
Number of Sent Packets				
Number of Sent Bytes				
Synchronization Source Identifier of Source				
Fraction Lost		Cumulative Number of Packets Lost		
Highest Sequence Number Received				
Interarrival Jitter				
Time of Last Sender Report Packet				
Time Since Last Sender Report Packet				

Fig. 10B

RTP Packet



RTCP Packet



$$t_i = t_s + \frac{TS_0 - TS_i}{\text{number of clock cycles}} \dots(1)$$

Fig. 11

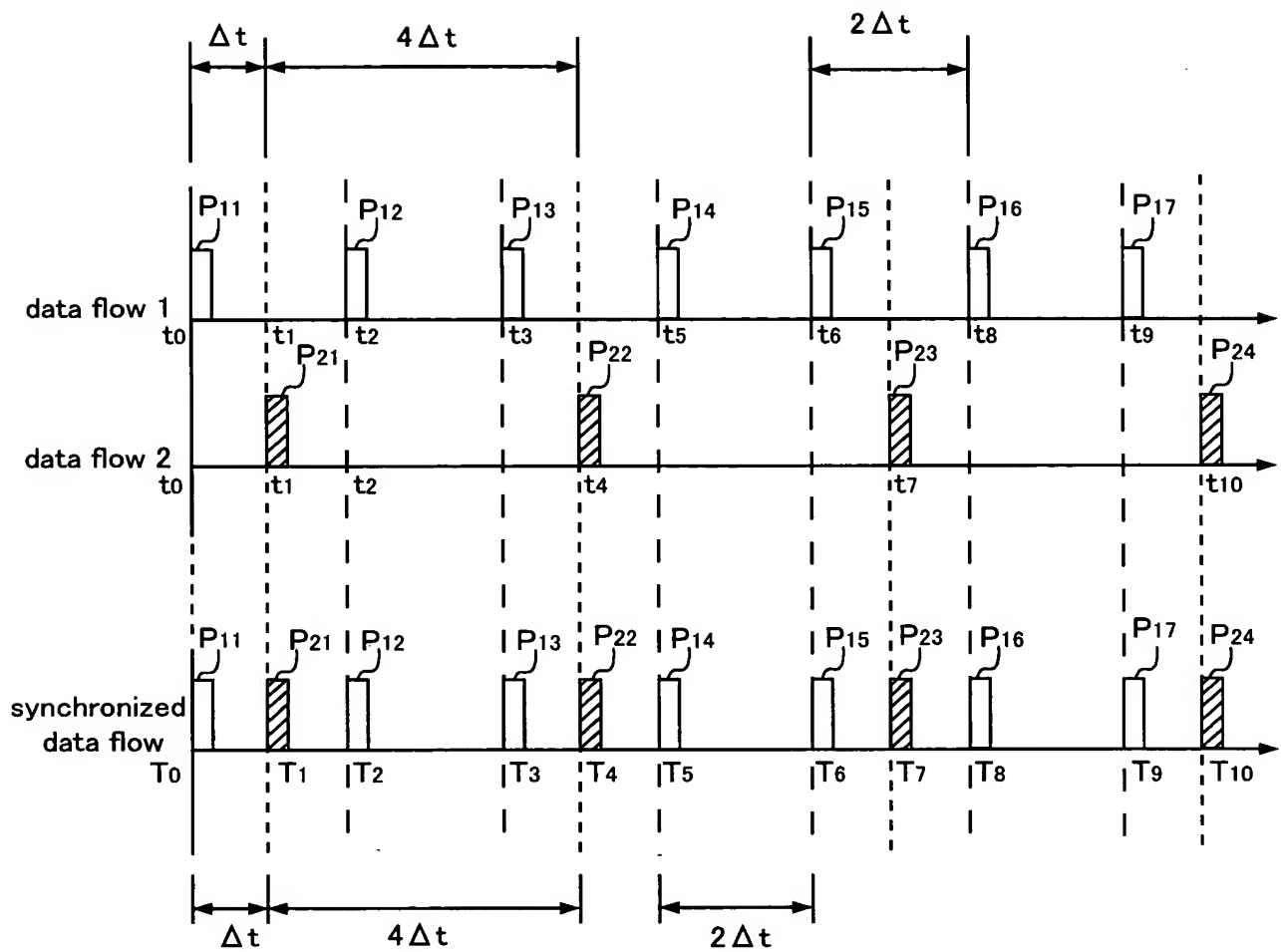


Fig. 12

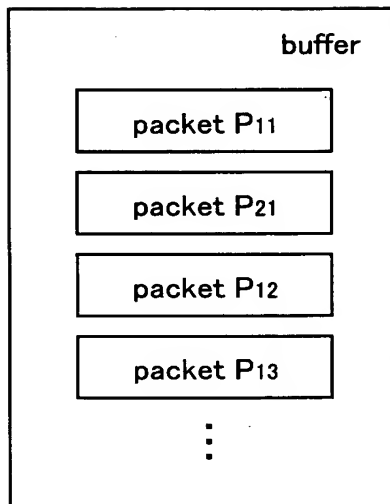


Fig. 13A

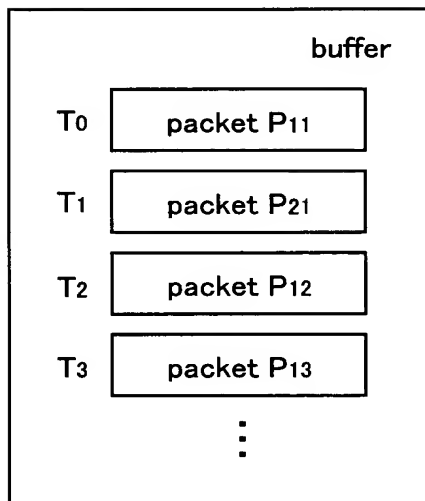


Fig. 13B

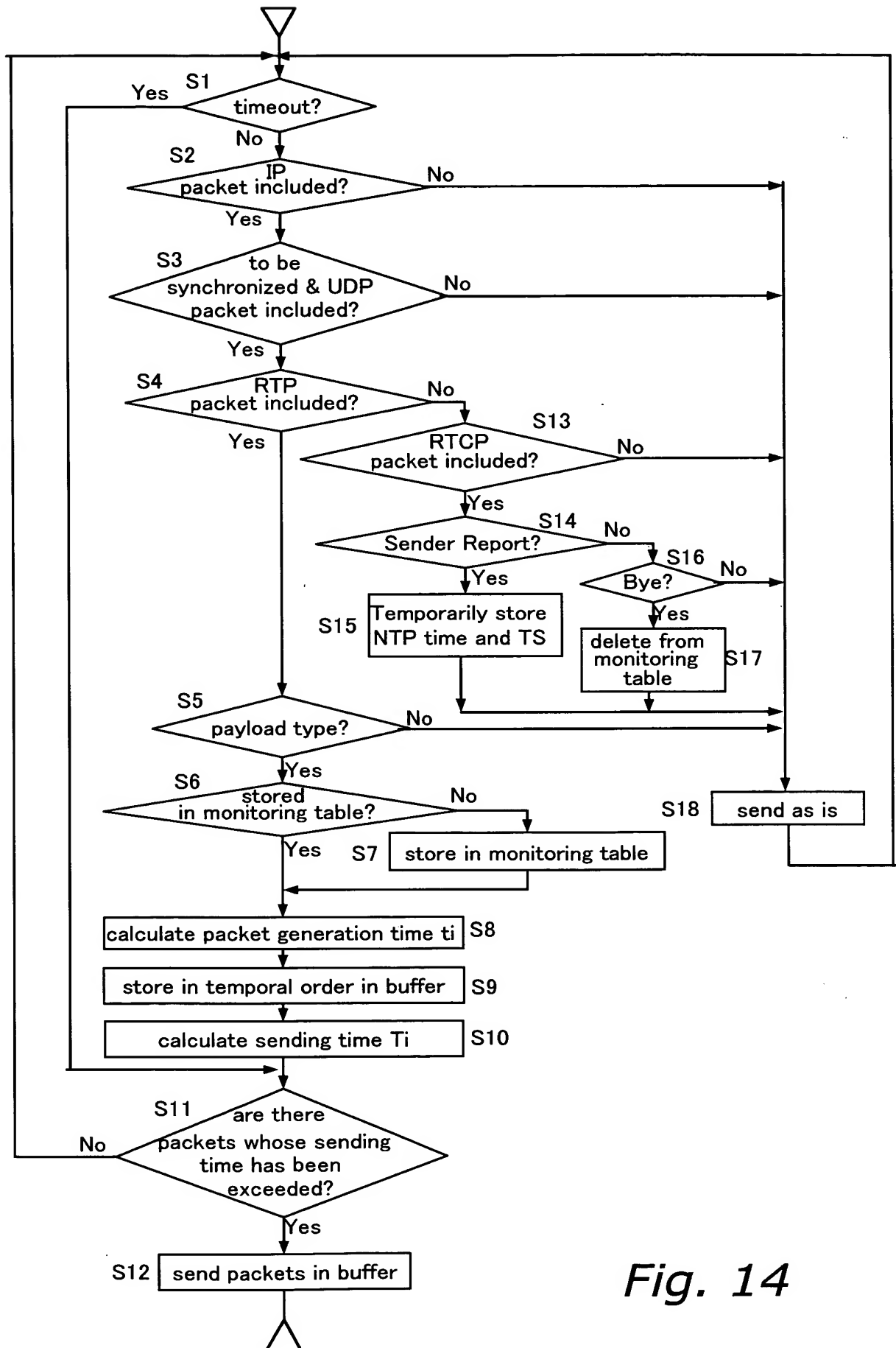


Fig. 14

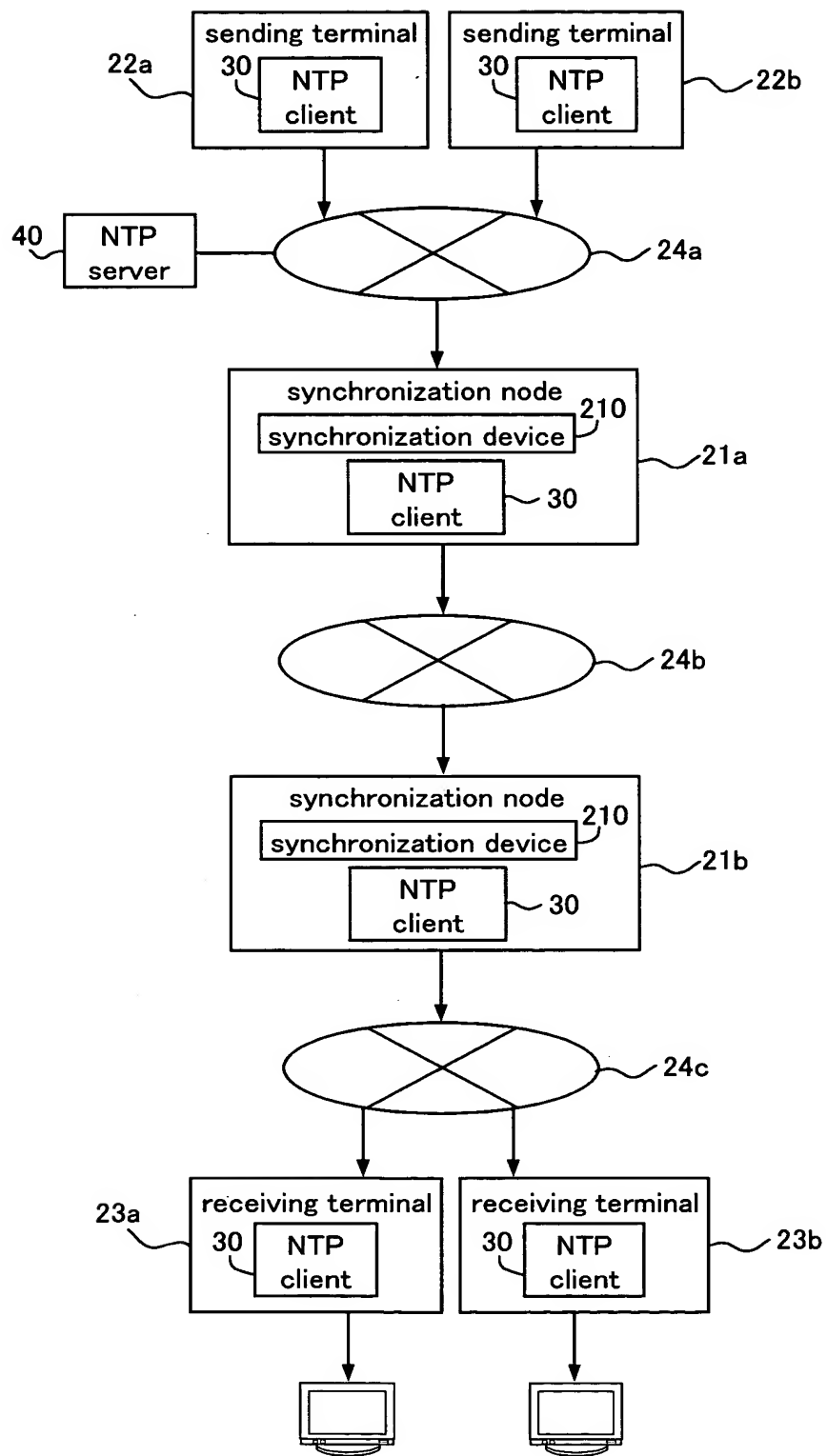


Fig. 15

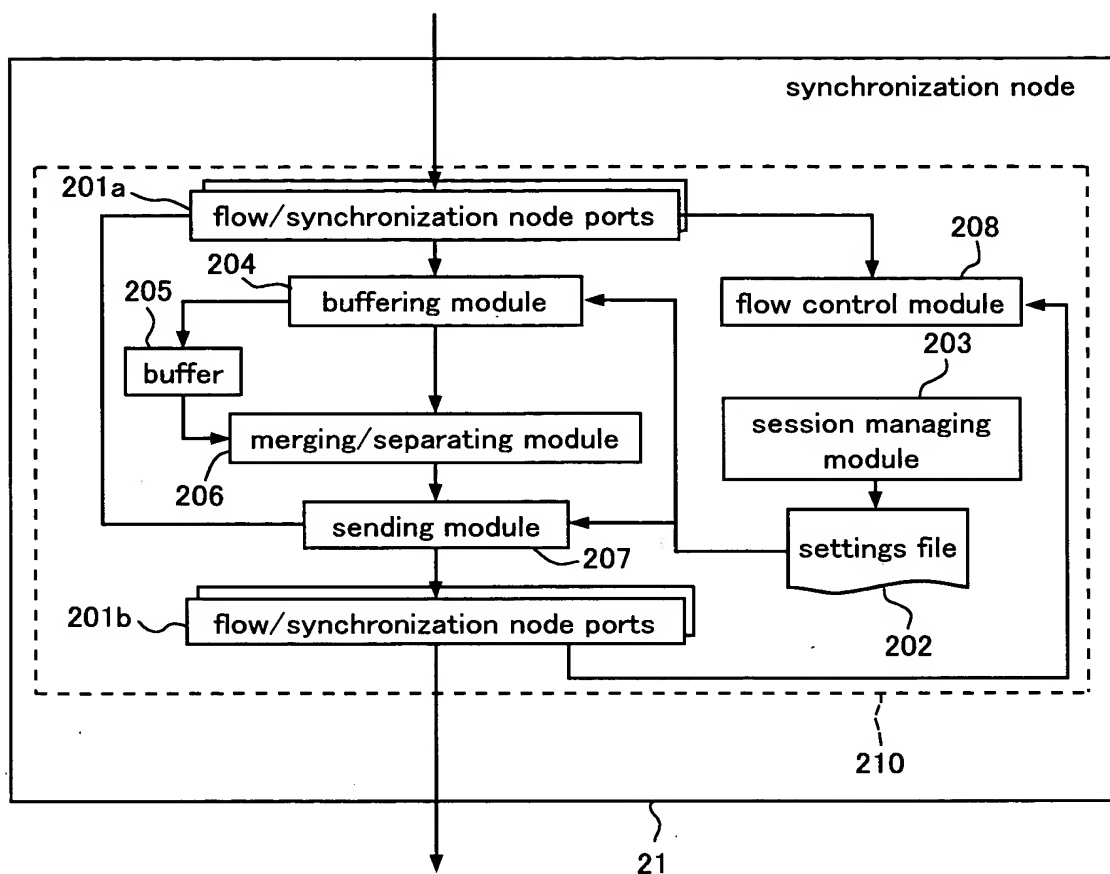








Fig. 16

```
# Group_1 Settings
Group_1_Name: English Conversation Class
Group_1_Comment: Flow Group for English School
# Source Specification
Group_1_Dst: 12.345.678.910, 6970, 1
Group_1_Dst: 12.345.678.910, 6972, 2
Group_1_Dest: 98.765.432.198, 6970, 3
# Settings of Receiver Location
Group_1_Rcv: 8002, 11
Group_1_Rcv: 8004, 12
Group_1_Rcv: 8006, 13
# Merged Data Flow Destination
Group_1_Mix_Dst: 56.789.123.456, 8000
# Merged Data Flow Receiver Location
Group_1_Mix_Rcv: 8000

# Group_2 Settings
.
```

Fig. 17



<http://localhost/admin/>

Synchronization System

Flow Group

Group Name	Comment / Explanation	
English Conversation	Group of AAA English School	<div><div>select</div><div>delete</div></div>
Tutoring (Math)	Group of Math Class at BBB Private Tutoring School	<div><div>select</div><div>delete</div></div>
Tutoring (Physics)	Group of Physics Class at CCC Private Tutoring School	<div><div>select</div><div>delete</div></div>





New Group

Group Name

Comment

Create

Fig. 18





http://localhost/admin/group1

Synchronization System Settings

Destination Settings

IP Address	Port Number	Flow ID	
<input type="text" value="12.345.678.910"/>	<input type="text" value="6970"/>	<input type="text" value="1"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="12.345.678.910"/>	<input type="text" value="6972"/>	<input type="text" value="2"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="98.765.432.198"/>	<input type="text" value="6970"/>	<input type="text" value="3"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

Receiver Location Settings

Port Number	Flow ID	
<input type="text" value="8002"/>	<input type="text" value="11"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="8004"/>	<input type="text" value="12"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text" value="8006"/>	<input type="text" value="13"/>	<input type="button" value="Change"/> <input type="button" value="delete"/>
<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>

Merged Data Flow Destination Settings

IP Address	Port Number	
<input type="text" value="56.789.123.456"/>	<input type="text" value="8000"/>	<input type="button" value="Change"/> <input type="button" value="Clear"/>

Merged Data Flow Receiver Location Settings

Port Number	
<input type="text" value="8000"/>	<input type="button" value="Change"/> <input type="button" value="Clear"/>

Fig. 19

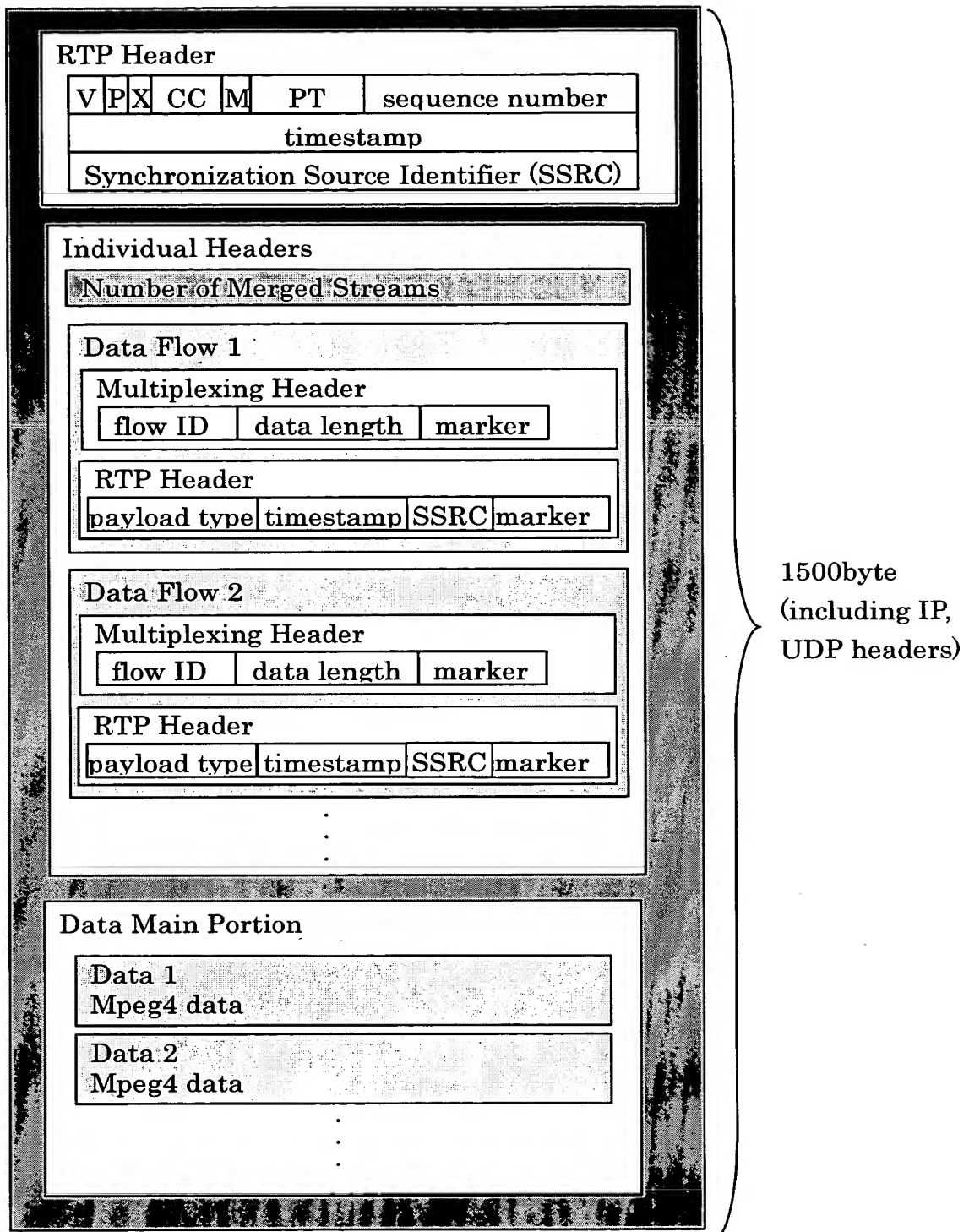


Fig. 20

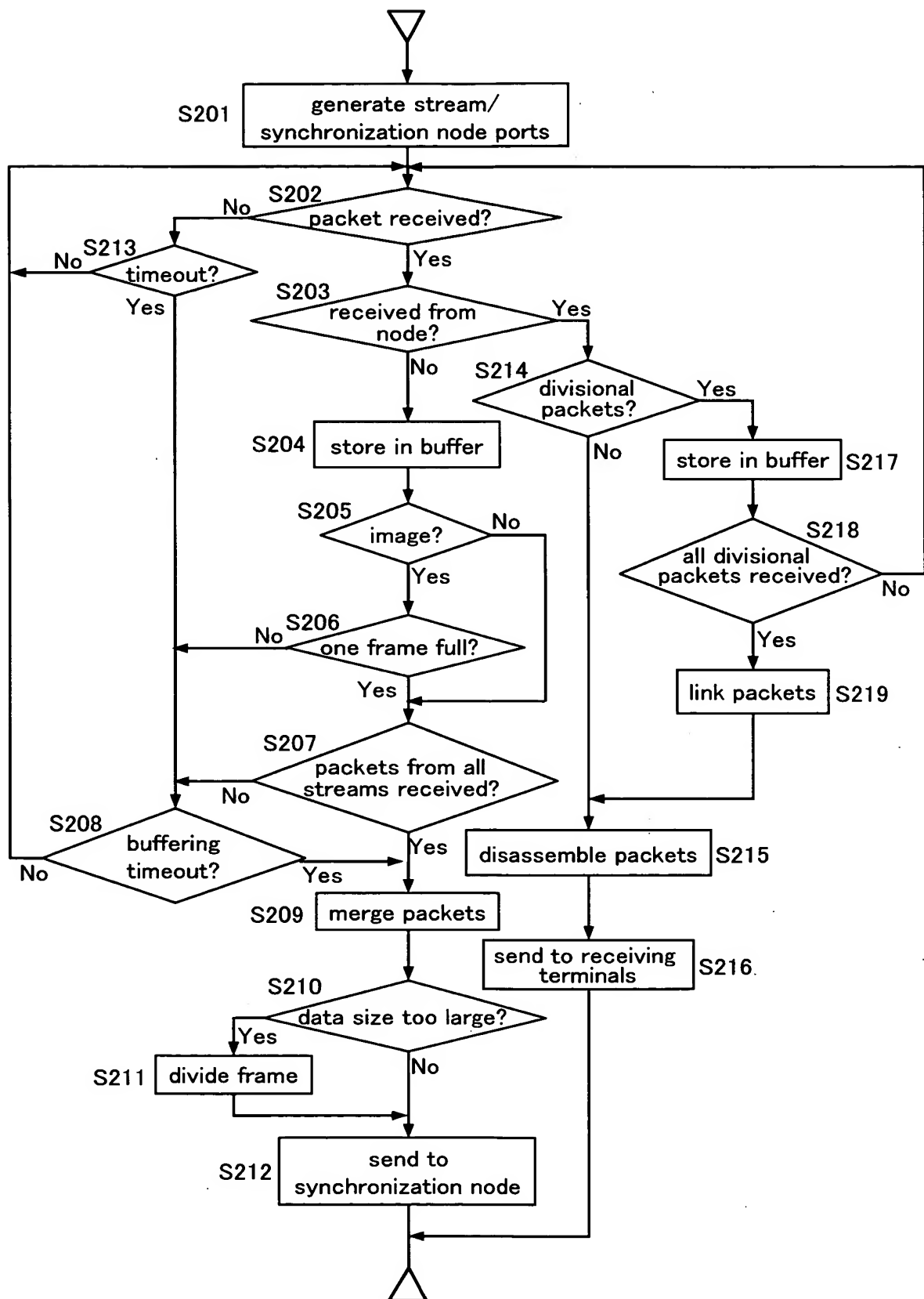


Fig. 21